International Journal of Innovative Research in Engineering & Management (IJIREM)
ISSN: 2350-0557, Volume-9, Issue-1, February 2022
https://doi.org/10.55524/ijirem.2022.9.1.109
Article ID IJIRD-1160, Pages 516-519
www.ijirem.org

# VLSI-Based Electronic Voting Machine

**M. Raja Kumar[1], B. Anitha[2], R. Pravallika[3], D. K. Kavitha[4], S. Joseph[5], N. Rambabu[6], and R. GopiNailk[7]**

[1,2]Assistant Professor, Department of Electronics and Communication Engineering, PACE Institute of Technology and Sciences, Ongole, Andhra Pradesh, India
[3,4]UG Student, Department of Electronics and Communication Engineering, PACE Institute of Technology and Sciences, Ongole, Andhra Pradesh, India
[5,6,7]Assistant Professor, Department of Electrical and Electronics Engineering, PACE Institute of Technology and Sciences, Ongole, Andhra Pradesh, India

Correspondence should be addressed to M. Raja Kumar; rajakumar_m@pace.ac.in



**ABSTRACT-** Voting in the paper was a time-consuming and erroneous process. Voting by electronic voting machine (EVM) is a simple, secure, and time-saving technology. The proposed paper consists of the parties assigned to the election can be represented in the box along with the total number of contestants participating in the election process. Ahdar Biometric is also included in the machine which is a key role paid to avoid fraudulent voters and to prevent fraud. In the voting process begins when a voter votes for a particular party through the adhar bio metric process after the buzzer will display a notification of who voted for the party displayed on the screen. After the completion of the voting process the votes are confirmed by comparing the votes cast with the contestants in their respective The proposed method is usefull for college level to all election boards and digital voting system for real-time applications ranging from community college elections to university level elections, as it has the advantage of being able to be re-programmed to perform different functions according to the user's wishes, which helps to reduce prevalence. expenditures.

**KEYWORDS-** VHDL, FPGA LCD Display, Adhar Bio metric, Voting Machine

## I. INTRODUCTION

In any vote-based system, casting a ballot is the sole criteria for citizens to choose their representatives. As a result, this entire method should be carried out with the utmost care so that only a reasonable and deserving candidate is chosen solely on the basis of popular vote. Previously, judgments were made using a poll paper structure, in which people cast their votes for their favourite challenger by simply stamping against his or her name, [1] but this technique was prone to flaws such as vote counting and unjustified results Electronic voting machines were devised to address each of these inequalities. Regardless, the concept of a simple electronic voting system with a disposable memory card was a bit random[2].

We designed an electronic voting machine in Verilog HDL using Xilinx ISE 14.7i that can be implemented on FPGA (Field Programmable Gate Array)[3] hardware since we realise how difficult it is to manage control signals.Additionally, this execution includes a secret key that is computerised and difficult to hack.

## II. LITERATURE SURVEY

The demonstrated in their paper that to overcome these difficulties and build a good electoral method,[4] implementation of electronic mechanical devices in the digital domain is given in this paper. It is difficult to tamper votes in the digital domain and provides a secure and safe technique for conducting elections. May, P., Ehrlich, H.C., and Steinke,[5]

In their work, Czajkowski, K., Fitzgerald, S., Foster, I., and Kesselman, C.[6] said that the conventional selection approach was a lengthy and error-prone process.[7] Electronic mechanical device (EVM) polling is a simple, safe,[9] and secure method that takes very little time.[8] Only one vote is accepted by the current Electronic Mechanical Devices (EVMs) used in LOK SABHA and an ASSEMBLY election.[10]

## III. PROPOSED METHOD

The Proposed method of electronica voting machine programing is hardware discription language for high rubustness. voting mechanisam that is ahdar based finger printer. traditional paper-based choice technique was a very time-consuming and error-prone process. Electronic mechanical device (EVM) polling is a simple, safe, and secure technology that takes very little time(see figure 1). The suggested digital EVM was created in Verilog HDL and implemented on the FPGA Artix7. The suggested approach has three stages: in the first, we determine the total number of voters and contestants participating in the election process.

Voter can understand easily to elect the member as given adhar based biometric and LCD Displasy shows the symbol of the party to ensure easyly identify the which symbole or which party they voting was cast. The process also evvery one understand easily and high rubbestness . Moreover counting process also high speed and more effeccient of data analsysis more secure.

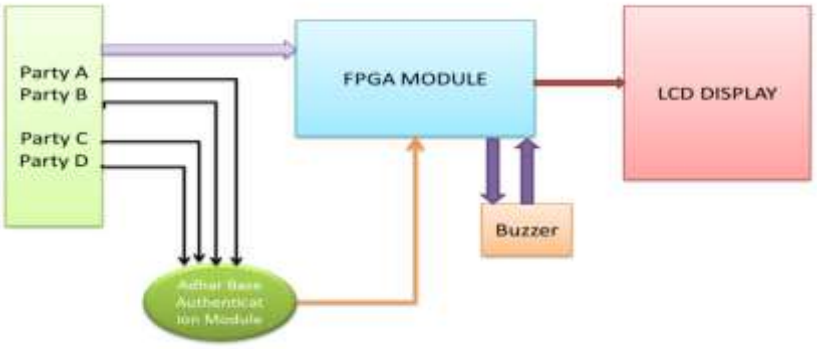


Fig 1. Block diagram of EVM

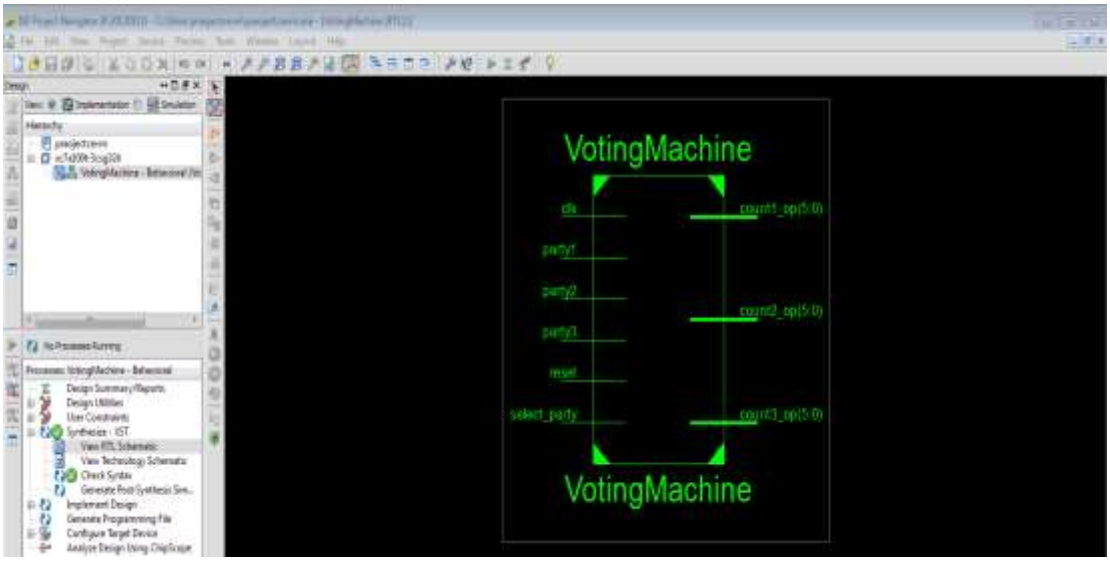


Figure 2: Voting machine schematic diagram

## IV. RESULT AND ANALYSIS

The HDL laguage is implemented on Electronic voting machine schematic, figure 2 shows the number of parites included and no of sysmboles is there and like inputs and outputs.The schematic figure 3 shows the inputs voter_switch, clk, voting_en and the outputs (see figure 4 and 5) of the module are party1, party2, party3, reset, select party,output count1(5,0), count2(5,0), count3(5,0)

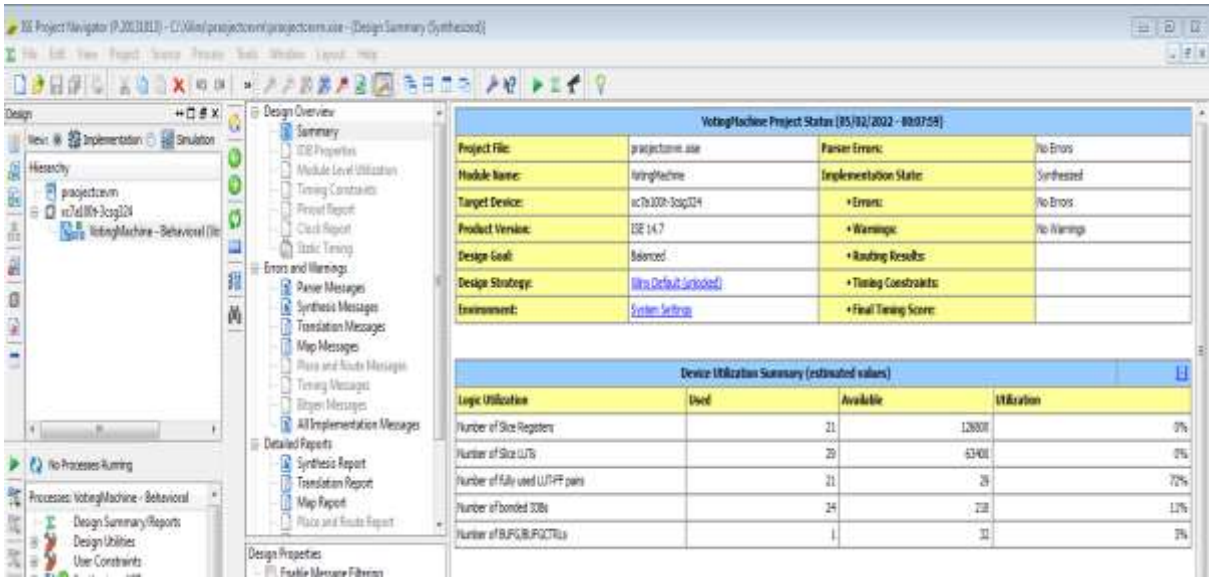

Figure 3: Sythesis report for hdl program

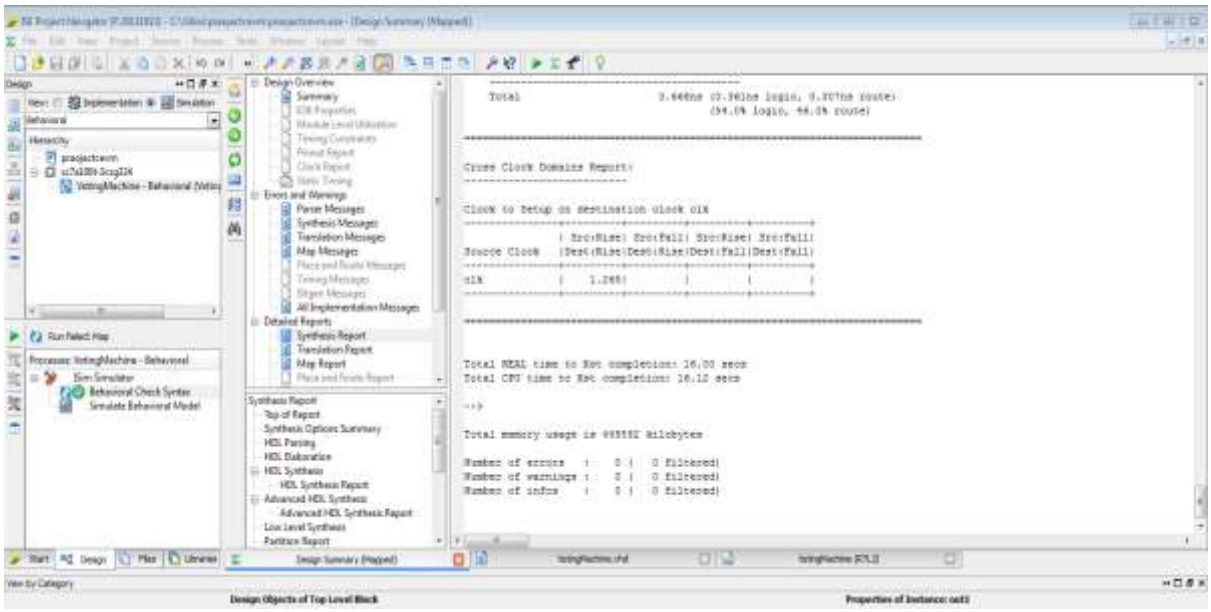

Figure 4: Result and analysis for the clk analisis for the party voting timing cycle

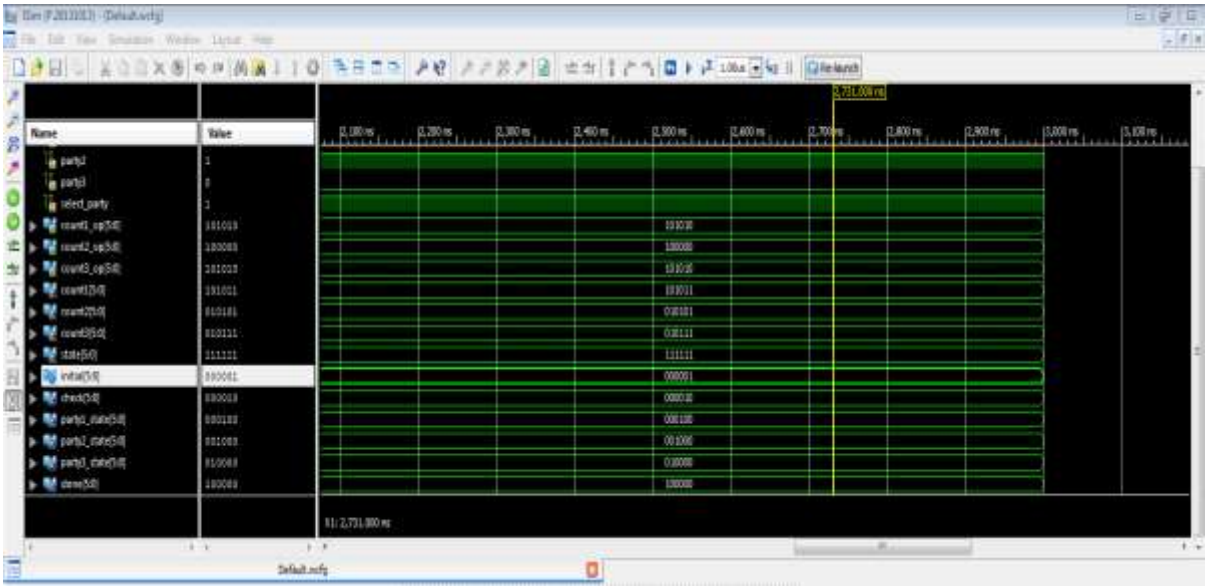

Figure 5: Simulation result for electronic voting mehine using hdl

## V. CONCLUSION

The Proposed electronic voting machine designed for a Hardware Discription language using high robustnessand exat design and more secure usefull ffulfilled election standards such as enrolling the entire number of voters and candidates in the first stage, allowing the voter to vote for a specific party of his choice, which is then certified by the opled in the second step. In the final step, it compares all of the legal votes cast for various parties to determine the election winner. We can now say with certainty that the simulated design can be implemented on any FPGA board.It ithe one of the secure and safe voting machanisam. Because of Adhar based bio metric is attached with machine to avoid fake voting and rigging, One of the most important aspects of the project is the EVM's security section, where each voter will have his or her own voting card and the password will be his or her finger print. The voter's identification will be scanned by the computer, and if the voter is confirmed to be eligible, the polling officer will allow them to vote.

## CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

## REFERENCES

[1] Smith, T.F., Waterman, M.S.: Identification of Common Molecular Subsequences. J. Mol. Biol. 147, 195–197 (1981) .

[2] May, P., Ehrlich, H.C., Steinke, T.: ZIB Structure Prediction Pipeline: Composing a Complex Biological Workflow through Web Services. In: Nagel, W.E., Walter, W.V., Lehner, W. (eds.) Euro-Par 2006. LNCS, vol. 4128, pp. 1148–1158. Springer, Heidelberg (2006)

[3] Czajkowski, K., Fitzgerald, S., Foster, I., Kesselman, C.: Grid Information Services for Distributed Resource

Sharing. In: 10th IEEE International Symposium on High Performance Distributed Computing, pp. 181–184. IEEE Press, New York (2001)

[4] Foster, I., Kesselman, C., Nick, J., Tuecke, S.: The Physiology of the Grid: an Open Grid Services Architecture for Distributed Systems Integration. Technical report, Global Grid Forum (2002) .

[5] N.S.N. LAKSHMI PATHI RAJU, A.PRAVIN, N.S.MURTHY SHARMA, S.S.KIRAN A Novel Proposal On Implementation Of Polling Percentage Improvement System Through Embedded Based Integration Of electronic Voting Machine And Other Methodologies – IJ ETA ETS ISSN: 0974-3588 | JULY ‟12 – DECEMBER ‟12 | Volume 5 : Issue 2 pp 1-5

[6] Jeremy Clark, Aleks Essex and Carlisle Adams “Secure and Observable Auditing of Electronic Voting Systems using Stock Indices” 0840-7789/07/$25.00 ©2007 IEEE

[7] Leyou Zhang, Yupu Hu, Xu’an Tian and Yang Yang “Novel Identitybased Blind Signature for ElectronicVoting System” 978-0- 7695-3987-4/10 $26.00 © 2010 IEEE DOI 10.1109/ETCS.2010.198 4.

[8] Ying Qiu and Huafei Zhu ”Somewhat Secure Mobile Electronic-voting Systems Based on theCut-and-Choose Mechanism” 978-0-7695-3931-7/09 $26.00 © 2009 IEEE DOI 10.1109/CIS.2009.39

[9] Arunkumar.N and Arunkumar.P.L “Analysis, Design & Real-Time Implementation of Electronic Voting Machine”. 6. J. Paul Gibson, Eric Lallet, and JeanLuc Raffy “Engineering a Distributed e-Voting System Architecture: Meeting Critical Requirements” H. Giese (Ed.): ISARCS 2010, LNCS 6150, pp. 89– 108, 2010.c_Springer-Verlag Berlin Heidelberg 2010.

[10] Rui Joaquim, André Zúquete and Paulo Ferreira “REVS – A ROBUST ELECTRONIC VOTING SYSTEM” 8. Mohammad Hajjar, Bassam Daya, Anis Ismail and Haissam Hajjar “AN E-VOTING SYSTEM FOR LEBANESE ELECTIONS” Journal of Theoretical and Applied